Site Inspection Report
M. Stephens Manufacturing
Cudahy, Los Angeles County, California

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List of Acronyms

amsl	above mean sea level
AOC	analyte of concern
APN	Assessor's Parcel Number
bgs	below ground surface
Brenntag	Brenntag Pacific, Inc.
CA 2nd MCL	California Secondary Maximum Contaminant Level
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CLPAS	Contract Laboratory Program Analytical Services
CPT	Cone Penetration Testing
CWD	Central Water District
DCA	dichloroethane
DCE	dichloroethylene
DP	direct push
DTSC	Department of Toxic Substances Control
ELA	East Los Angeles
EPA	United States Environmental Protection Agency
ESA	Environmental Site Assessment
Fed MCL	Federal Maximum Contaminant Level
ft	foot
ft^2	square-foot
GENIL	General Inspection Laboratories
GSWC	Golden State Water Company
HRS	Hazard Ranking System
LACSD	Sanitation Districts of Los Angeles County
LADPW	Los Angeles County Department of Public Works
MCL	Maximum Contaminant Level
MDL	method detection limit
mg/kg	milligram per kilogram
M. Stephens	M. Stephens Manufacturing
MWC	Mutual Water Company
NE710	North East 710 Study Area
NOV	Notice of Violation
NPL	National Priorities List
PA	Preliminary Assessment
PCE	tetrachloroethylene
PWC	Park Water Company
QC	Quality Control
RCRIS	Resource Conservation and Recovery Information System
RSL	Regional Screening Level
RWQCB	Regional Water Quality Control Board
SAP	Sampling and Analysis Plan

List of Acronyms (Continued)

SEMS	Superfund Enterprise Management System
SEP	soil exposure pathway
SI	Site Inspection
SQL	sample quantitation limit
SSL	soil screening level
TCE	trichloroethylene
TDL	target distance limit
TRI	Toxics Release Inventory
UST	underground storage tank
VOC	volatile organic compound
WESTON®	Weston Solutions, Inc.
µg/kg	microgram per kilogram
µg/L	microgram per liter

EXECUTIVE SUMMARY

The M. Stephens Manufacturing (M. Stephens) site is officially located at 8420 Atlantic Ave., Cudahy, Los Angeles County, California. The site comprises eight County parcels and multiple additional addresses are associated with the site. The approximately 6-acre site is located in an urban industrial area. The site is located less than one-quarter mile from residential properties.

Between the late 1940s and the mid-1980s, historical operations at the site included metal fabrication, electric parts manufacturing, and tool manufacturing. From the mid-1980s through 2003, the site was used by the M. Stephens Manufacturing Company for die-cast electrical parts manufacturing. Since 2003, no significant operations have been conducted at the site. The southeastern approximately 3 acres of the site are owned by the City of Cudahy.

Three underground storage tanks (USTs), a hydraulic car-hoist, and a subgrade clarifier were historically located on site. The USTs were reportedly used to store petroleum products. By 1995, all three USTs and the car-hoist had been removed from the site. The clarifier was removed in 2007. Waste containing tetrachloroethylene (PCE) was historically generated at the site. No additional information is known regarding specific on-site historical operations, hazardous substances, or hazardous substance management practices.

In 2005, a private party interested in acquiring the property conducted a subsurface soil investigation at the site. PCE was identified at low, but detectable, concentrations in shallow soil adjacent to the former clarifier. No additional elevated concentrations of metals or volatile organic compounds (VOCs) were reported during the investigation. No soil vapor or groundwater samples were collected during the investigation.

Prior to the 2015 Preliminary Assessment (PA), the U.S. Environmental Protection Agency (EPA) has had no historical involvement with the site. With the exception of a leaking UST case and various discharge permit requirements related to the former clarifier, no state or local regulatory agency has had any significant historical involvement with the site.

In November 2015, Weston Solutions, Inc. (WESTON), on behalf of EPA, conducted the SI at the site. During the SI, WESTON collected soil matrix source samples at depths up to 15 feet (ft) below ground surface (bgs) from nine on-site borings, collected groundwater release samples at depths up to 128 ft bgs from three on-site borings and one off-site boring, and collected secondary objective groundwater samples from two on-site and two off-site borings.

On-site soil samples collected during the SI investigation exhibited concentrations of metals, specifically antimony, barium, cadmium, and lead, and VOCs, specifically PCE, that exceeded the site-specific action levels. However, the exhibited concentrations only slightly exceeded action levels, were identified in only a limited number of the samples, and were all collected from near-surface (i.e., 2 ft bgs) depths.

Groundwater release samples collected during the investigation exhibited elevated concentrations of metals and VOCs. Maximum concentrations include arsenic at 13 micrograms per liter (µg/L)

and trichloroethylene (TCE) at 29 µg/L. The federal Maximum Contaminant Levels (MCLs) for arsenic and TCE are 10 µg/L and 5.0 µg/L, respectively.

The results of this SI did not identify any significant hazardous substance source areas at the site. Furthermore, the data suggest that it is unlikely that historical on-site operations have significantly impacted shallow groundwater beneath the site.

1.0 INTRODUCTION

1.1 Regulatory Background

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), Weston Solutions, Inc. (WESTON®) has been tasked to conduct a Site Inspection (SI) of the M. Stephens Manufacturing (M. Stephens) site in Cudahy, Los Angeles County, California.

The M. Stephens site was identified as a potential hazardous waste site and entered into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Public Access Database on September 30, 2013 (CAN000909573). CERCLIS has since been retired and its data transitioned into the Superfund Enterprise Management System (SEMS). The site was formerly known as Univar USA. A Preliminary Assessment (PA) was completed for the U.S. Environmental Protection Agency (EPA) by WESTON on April 30, 2015. The purpose of a PA is to review existing information on a site with potential releases of a hazardous substance and its environs to assess the threats, if any, posed to public health, welfare, or the environment and to determine if further investigation under CERCLA is warranted. Prior to the 2015 WESTON PA, EPA completed a Site Screening in September 2013 (DTSC, 2013; EPA, 2017a; Weston, 2015).

After reviewing the 2015 PA, EPA decided that further investigation of the M. Stephens site would be necessary to more completely evaluate the site using the EPA Hazard Ranking System (HRS) criteria. The HRS assesses the relative threat associated with actual or potential releases of hazardous substances at the site. The HRS has been adopted by EPA to help set priorities for further evaluation and eventual remedial action at hazardous waste sites. The HRS is the primary method of determining a site's eligibility for placement on the National Priorities List (NPL). The NPL identifies sites at which EPA may conduct remedial response actions. This report summarizes the results of the SI for the M. Stephens site (EPA, 2015).

More information about the Superfund program is available on the EPA website at http://www.epa.gov/superfund.

1.2 Apparent Problem

EPA determined that a Site Inspection (SI) was needed at the M. Stephens site because of the following apparent problems:

- The site has historically been used for metal fabrication, electric parts manufacturing, tool manufacturing, and die-cast electrical parts manufacturing. Specific on-site activities, hazardous substances, and hazardous substance management practices are not known. Waste containing tetrachloroethylene (PCE) was historically generated at the site (DTSC, 2017b; EPA, 2017c; Weston, 2015).

- Process wastewaters generated during historical on-site activities were treated using a subgrade clarifier (DPW, 2007; Weston, 2015).

- A subsurface investigation conducted in 2005 identified detectable concentrations of PCE in shallow soil beneath the site (CC, 2005).

- The site is located within the North East 710 Study Area (NE710). Drinking water wells in the NE710 have historically been impacted by elevated levels of metals and volatile organic compounds (VOCs). The area is under investigation in order to identify the primary sources of this contamination and facilitate further investigation and remediation at those sources under the auspices of either EPA or the State of California. The site is located less than one-quarter mile north-northwest of the City of South Gate's Well 7, which was closed in 2002 and historically reported elevated concentrations of arsenic, chromium, and trichloroethylene (TCE) (Google, 2017; RWQCB, 2015; Weston, 2016).

2.0 SITE DESCRIPTION

2.1 Location *(See Figure 1)*

The M. Stephens site is located at 8420 Atlantic Ave., Cudahy, California. Additional addresses associated with the site include 8414 Atlantic Ave., and 4727, 4805, 4817, 4831, and 4839 Patata St. The geographic coordinates for the site are 33° 57' 22.6" North latitude and 118° 10' 59.5" West longitude (Appendix A). The location of the site is shown in Figure 1.

2.2 Site Description *(See Figures 2 through 4)*

The M. Stephens site occupies approximately 5.9 acres in an urban industrial area at the southern portion of the city of Cudahy, immediately adjacent to the city of South Gate. The site is comprised of eight Los Angeles County Assessor parcels, which are identified by Assessor Parcel Numbers (APNs) 6224-034-010, 6224-034-036, 6224-034-037, 6224-034-039, 6224-034-900 (formerly APN 6224-034-014), 6224-034-901 (formerly APN 6224-034-032), 6224-034-902 (formerly APN 6224-034-040), and 6224-034-903 (formerly APN 6224-034-041). A parcel layout map is presented in Figure 2 (Google, 2017; LACA, 2017; Appendix B).

The site is bordered to the north by a semitrailer truck (i.e., semi truck) service station (Spirit Truck Stop), a freight distribution facility (R Espinoza Trucking/Century Intermodal Corp.), a concrete mixing and distribution facility (Latino's Ready Mixed Concrete), and a door/roof hatch/skylight manufacturing facility (Dur-Red). The site is bordered to the east by the Cudahy Industrial Center, which includes various light industrial and commercial suites. The site is bordered to the south, across Patata Street and the Southern Pacific Railway line, by a freight distribution facility (Performance Team Freight Systems). The site is bordered to the west, across Atlantic Avenue, by a commercial fueling station (Roche Fuel Stop); and the General Inspection Laboratories (GENIL) site (EPA ID No.: CAD027897164), which includes a non-destructive testing facility (Mistras NDT Services), a fitness equipment sales facility (USA Fitness/Extreme Training Equipment), and a religious book sales and distribution facility (Libreria Nueva Jerusalem) (Google, 2017; Appendix B).

As of October 2016, the site was occupied by a single significant structure. The approximately 19,400 square-foot (ft^2) former M. Stephens Building was located at the southwestern portion of the site. A heavily-weathered asphalt-paved parking lot was located south-adjacent to the building and several utility poles were located throughout the property. A subgrade utility vault was located at the northwestern portion of the site. With the exception of the parking lot, the surface of the site was covered in a mixture of weathered concrete, asphalt, and exposed soil. A site layout map is presented in Figure 3 (Google, 2017; Appendix B).

The site has been developed since at least 1923, at which time it was occupied by agricultural fields and single-family residential buildings. Between approximately 1938 and 1950, the northern and eastern portions of the site were redeveloped to accommodate several manufacturing, warehousing, and office buildings. Industrialization of the site continued through the 1950s and early 1960s. By 1966, only a single residential building remained on site alongside at least

13 distinct industrial buildings. By 1972, the remaining residential building had been removed. In approximately 1987, the existing M. Stephens Building was constructed at the former location of a smaller warehouse building. Between July 2008 and June 2009, all of the remaining significant structures at the site were removed with the exception of the existing M. Stephens Building. The historical site layout is shown in Figure 4 (Google, 2017; LACA, 2017; Weston, 2015).

At least three underground storage tanks (USTs), an oil-filled car hoist, and a subgrade clarifier were historically located on site. An approximately 1,500-gallon UST, a 500-gallon UST, and the car hoist were located at the southeastern portion of the site, south-adjacent to the former Jackson Iron Works Building. Both USTs were removed in November 1989 and the car-hoist was removed in August 1995. A 10,000-gallon UST, which was removed sometime before 1992, was located south-adjacent to the southeastern corner of the existing M. Stephens Building. The subgrade clarifier, which was removed in May 2007, was located approximately 115 feet (ft) northeast of the existing M. Stephens Building (CC, 2005; DPW, 2007; LACSD, 1992; RWQCB, 1995; Weston, 2015).

2.3 Operational History *(See Table 1)*

The M. Stephens site is currently owned by a municipality and two corporate entities. The City of Cudahy owns the four southwestern parcels (i.e., 6224-034-900, -901, -902, and -903). These parcels, which were formerly owned by the Cudahy Economic Development Corporation, were assigned new APNs in March 2016 to designate them as city-owned properties. The two eastern parcels (i.e., 6224-034-010 and -036) are owned by Tssay J and R LLC and the two northern parcels (i.e., 6224-034-037 and -039) are owned by Patata Investments LLC. Tssay J and R LLC and Patata Investments LLC are affiliated real estate investment corporations and share a primary owner. Since approximately 1997, the site has been owned by various real estate investment corporations including, but may not be limited to, BBA Southwood LLC, Carmar LLC, Patata Streets LLC, and Agora Realty & Management. Between approximately December 1986 and December 1996, the site was owned by M. Stephens Manufacturing Inc./BWF Manufacturing. Ownership information prior to 1986 is not known (DTSC, 2013; Weston, 2015; Appendix C-1).

Historical operations at the site include residential and agricultural activities from approximately 1900 to the late 1940s; metal fabrication, electric parts manufacturing, and tool manufacturing from approximately the late 1940s through the mid-1980s; and die-cast electrical parts manufacturing from approximately 1986 through 2003. With the exception of semi truck storage in late 2009, there have been no known operations conducted at the site since 2003. The identified current and historical operators at the site are provided in Table 1 (Weston, 2015).

From approximately the late 1940s to at least 1971, at the eastern portion of the site, the Jackson Iron Works metal fabrication facility operated on the entirety of parcel 6224-034-010. Neither specific operational activities nor hazardous substances associated with these activities are known. Between approximately 1981 and 1986, Grating Pacific, Inc. and Plasma Specialists, Inc. also conducted metalworking activities at this portion of the site. All three of these businesses were addressed at 4831 Patata St. (Weston, 2015).

During the early 1950s, at the southeastern portion of the site, the Patata Engineered Wire & Metal Manufacturing Company conducted metal fabrication activities on the southern portion of parcel 6224-034-036. From the late 1950s through the mid-1960s, the Automatic Instrument Service Company conducted instrument control device repair activities at this portion of the site. Both of these businesses were addressed at 4727 Patata St. (Weston, 2015).

From the early 1950s through the mid-1960s, at the central portion of the site, Martin Electric Motors conducted service and sales of electrical parts on the northern portion of parcel 6224-034-900 and the central portion of parcel 6224-034-036. During the mid-1960s, Jackson Iron Works appears to have expanded into this area and utilized at least two large overhead crane-ways. In at least 1951, Martin Electric Motors was addressed at 4817 Patata St. (Weston, 2015).

From the mid-1950s through at least the late 1960s, at the southwestern portion of the site, Martin Electric Motors conducted electrical equipment storage, including what appears to have been electrical transformers, on the entirety of parcel 6224-034-901 and the southern half of parcel 6224-034-903. From at least 1958 through 1967, Martin Electric Motors was addressed at 4805 Patata St. (Weston, 2015).

From 1958 to at least 1962, at the west-central and northern portions of the site, the Greer Machine Company conducted machining operations on the entirety of parcels 6224-034-037, -039, and -902. From approximately 1962 to the mid-1970s, the Pratt & Whitney Tool Division of Colt Industries conducted tool manufacturing operations at this portion of the site. From approximately the mid-1960s to the mid-1980s, Trico Superior and the Sierra Tank and Construction Company conducted tank manufacturing operations at this portion of the site. The Greer Machine Company was addressed at 8414 Atlantic Ave. Pratt & Whitney Tools, Trico Superior, and Sierra Tank and Construction Company were most frequently addressed at 8420 Atlantic Ave. (TSD, 1980; Weston, 2015).

In 1986, operations across the entirety of the site were converted over to the manufacturing of metal electrical equipment by the M. Stephens Manufacturing Company. M. Stephens primarily manufactured die-cast, weatherproof, outlet boxes. In 1997, M. Stephens, along with their BWF product line, was acquired by Intermatic, Inc and, in 2003, all on-site manufacturing operations were consolidated into a facility in Tijuana, Mexico. At some point after 2003, the M. Stephens/BWF product line was acquired by the Teddico Electrical Company; however, the details of this acquisition are not known. M. Stephens was most frequently addressed at 8420 Atlantic Ave.; however, in some records, the facility was addressed at 4839 Patata St. (DTSC, 2017b; EPA, 2017c; Weston, 2015).

Three on-site USTs were historically used to store gasoline and/or oil in support of facility operations. In addition, a car-hoist and several overhead crane-ways, which likely utilized some form of hydraulic oil, were used in support of operations. Reportedly, by 1986, all three of the USTs, the car-hoist, and the crane-ways were inactive. No additional information is known regarding the specific use of on-site USTs (CC, 2005; DPW, 2007; LACSD, 1992; RWQCB, 1995; Weston, 2015).

Unaltered petroleum products, as well as any substances that are purposefully added to the indigenous petroleum product during the refining process, are excluded from consideration under CERCLA.

Between at least 1978 and 2003, at least Trico Superior and M. Stephens used a subgrade clarifier in support of on-site operations. The clarifier received wastewater from the facility and discharged effluent, under permit, to the sanitary sewer system. No additional information is known regarding the influent waste-streams associated with this clarifier; however, PCE-containing waste was generated at the site in at least the late 1980s and in 1999 (CC, 2005; DTSC, 2017b; EPA, 2017c; LACSD, 2003; TSD, 1980; Weston, 2015).

No additional information is known regarding specific on-site historical operations, hazardous substances, or hazardous substance management practices.

2.4 Regulatory Involvement

2.4.1 U. S. Environmental Protection Agency

As of August 2017, the M. Stephens site is not listed in the Resource Conservation and Recovery Information System (RCRIS) database (EPA, 2017b).

The site is listed in the Toxics Release Inventory (TRI) database as *M Stephens Manufacturing Inc* (TRI ID: 90201MSTPH8420S), with an address of 8420 Atlantic Ave. The most recent release information provided in the TRI database is from 1995. Listed chemical categories include copper and PCE (EPA, 2017c).

2.4.2 California Environmental Protection Agency, Department of Toxic Substances Control (DTSC)

The site is listed in the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) EnviroStor database as *M Stephens Manufacturing* (Envirostor ID: 60001790), with an address of 4839 Patata St. The case is listed as an *Evaluation* site that was referred to EPA as of September 17, 2013. DTSC has had no known additional involvement with the site (DTSC, 2017a).

2.4.3 California Environmental Protection Agency, Regional Water Quality Control Board (RWQCB)

The site is listed in the California Environmental Protection Agency, Regional Water Quality Control Board (RWQCB) GeoTracker database as *M Stephens Manufacturing* (GeoTracker ID: T0603703809; Case No.: I-11513), with an address of 4839 Patata St. The site is listed as a *LUST Cleanup Site* with a cleanup status as *Completed – Case Closed as of 9/27/1995*. The potential contaminant of concern is listed as *gasoline* and the potential medium of concern is listed as *soil* (RWQCB, 2017).

From at least the late 1970s through the early 1980s, RWQCB, in conjunction with Sanitation Districts of Los Angeles County (LACSD), conducted oversight of the monitoring and reporting of waste discharges from former site occupant, Trico Superior, to the sanitary sewer system. RWQCB has had no known additional involvement with the site (TSD, 1980).

2.4.4 Los Angeles County Department of Public Works (LADPW)

In June 2007, the Los Angeles County Department of Public Works (LADPW) issued a "No Further Action" letter for the M Stephens site in regard to the closure and removal of the on-site clarifier (DPW, 2007).

2.4.5 Sanitation Districts of Los Angeles County (LACSD)

From at least the late 1970s through 2003, LACSD, in conjunction with RWQCB, conducted oversight of the monitoring and reporting of waste discharges from former site occupants, Trico Superior and M. Stephens, to the sanitary sewer system. In 1992, LACSD conducted an inspection of the site to investigate discrepancies in the number and size of on-site USTs. The investigation concluded that three USTs had been located at the site and they had all been removed. In 1997, LACSD issued a Notice of Violation (NOV) to M. Stephens due to wastewater having been discharged from the facility to the sanitary sewer system that contained concentrations of zinc in excess of federal regulations. In December 2003, LACSD voided the Industrial Wastewater Discharge Permit for the site due to the company having ceased all industrial wastewater producing activities (LACSD, 1992; LACSD, 1997; LACSD, 2003; TSD, 1980).

3.0 INVESTIGATIVE EFFORTS

3.1 Previous Sampling

In November 1989, M. Stephens excavated and removed the two USTs formerly located at the southeastern portion of the site. Subsequent to the removal, three confirmation soil samples were collected from the base of the excavation. In 1994, additional soil samples were collected from the dispenser area, which exhibited elevated concentrations of petroleum hydrocarbons. In 1995, an additional subsurface investigation was conducted to further delineate the extent of the hydrocarbon contamination. During this investigation, which included the advancement of three borings to a maximum depth of 55 ft below ground surface (bgs), the former car-hoist was discovered. In August 1995, the car-hoist and approximately 184 cubic yards of petroleum-impacted soil were excavated and removed. Subsequent to the removal action, none of the confirmation soil samples exhibited concentrations of petroleum hydrocarbon that exceeded the project-specified action levels. Groundwater was not encountered during the investigations (AI, 1995).

In September 2005, a real estate developer interested in acquiring the site conducted a Limited Phase II Environmental Site Assessment (ESA). The ESA included the collection of subsurface soil samples from 11 on-site borings. Of the 11 borings, two were located adjacent to the former clarifier, one was located approximately 70 ft west of the former clarifier, one was located in the south-central portion of the site, one was located at the southeastern portion of the site, and six were located near the northern site boundary. Each boring was advanced to 15 ft bgs and an attempt was made to collect samples at 2, 5, 10, and 15 ft bgs. In total, 39 samples were collected, 12 of which were submitted to a laboratory and selectively analyzed for petroleum hydrocarbons, metals, VOCs, semivolatile organic compounds, and pH. The remaining 27 samples were archived and were not analyzed. PCE was identified at a concentration of 6.7 micrograms per kilogram (µg/kg) in the 5-ft bgs sample collected from north-adjacent to the former clarifier. PCE was also identified at a concentration of 5.9 µg/kg in the 2-ft bgs sample collected from approximately 70 ft west of the former clarifier. The assigned 2015 SI site-specific action level for PCE is 5.8 µg/kg and the residential Regional Screening Level (RSL) for PCE is 24,000 µg/kg. Slightly elevated concentrations of petroleum hydrocarbons were also identified in on-site soils. No additional elevated concentrations of metals or VOCs were reported during the investigation (CC, 2005).

Prior to the SI sampling event, no known soil vapor or groundwater sampling has been conducted at the site.

3.2 Site Investigation (SI) Sampling *(See Figures 5 & 6; Tables 2 through 4)*

In November 2015, WESTON, on behalf of EPA, conducted the SI sampling event at the M. Stephens site. The event included soil matrix source sampling, groundwater release sampling, and secondary objective groundwater sampling. The primary objective of the investigation was to document information to be used in the HRS characterization process, including additional source areas and levels of contamination in site soils and groundwater. The secondary objective of the investigation was to identify subsurface lithology and levels of contamination within various

water-bearing zones, both on and near the site. This information will be utilized in the development of a more comprehensive understanding of the hydrogeologic conditions that exist within the greater NE710 Study Area as well as the subbasin as a whole.

Sampling methodology, locations, analyses, and analytical results are summarized below. The Sampling and Analysis Plan (SAP), which was approved by EPA in September 2015, is provided in Appendix F.

Based on the historical use of the site and the elevated concentrations of contaminants in nearby municipal drinking water wells, analytes of concern (AOCs) at the site were identified as: arsenic, chromium, copper, zinc, PCE, and TCE. Based on the results of the SI investigation, additional AOCs were identified, including antimony, barium, cadmium, and lead.

All samples were submitted under the EPA Contract Laboratory Program to Shealy Environmental Services, Inc. for metal analysis by EPA Contract Laboratory Program Analytical Services (CLPAS) ISM02.3 or KAP Technologies, Inc. for VOC analysis by EPA CLPAS SOM02.3. The data were validated by the EPA Region 9 Quality Assurance Office. The complete validated analytical results are presented in Appendix H. The sample locations are shown in Figure 5.

3.2.1 Action Levels

In accordance with the HRS, the action levels to establish an observed release to groundwater, as well as to establish an on-site source of contaminated soil, are "significantly above background" concentrations. "Significantly above background" is defined as three times the background concentration for all media. When a background concentration is not detected at or above the method detection limit (MDL), the assigned background concentration is the sample quantitation limit (SQL); "significantly above background" for this scenario is defined as a concentration at or above the SQL.

Soil matrix samples collected from Boring MSM-DP-2, which is located at the central portion of the site, are designated as background soil samples for HRS purposes. The assigned background concentration for each analyte was determined by amalgamating the concentration data from each of the four discrete-depth soil samples. For any analyte with a reported MDL exceedance in the dataset, the background concentration was conservatively assigned as the arithmetic mean plus three times the standard deviation. For any analyte without an MDL exceedance, the background concentration was conservatively assigned as the maximum SQL value within the dataset. The assigned soil matrix action levels for select metals and VOCs are presented in Table 2.

Although the selected background location is situated within the historical operational area of the site, the exhibited concentrations were deemed to be generally consistent with published background levels for native soils in the region and appear unlikely to have been significantly impacted by hazardous substances. No VOCs were reported at concentrations above their respective MDL in any of the four discrete-depth background soil samples. The September 2015 SAP (Appendix F) indicates that soil background samples for the M. Stephens investigation were to be collected from Boring GIL-CPT-6 during the concurrently-conducted SI at the adjacent

GENIL site (EPA ID No.: CAD027897164. However, due to a sample preparation error at the analytical laboratory, all metal analytical data reported for this location were rejected during the data validation process. In addition, no VOCs were reported in any of the discrete-depth samples at concentrations exceeding their SQL. Based on this information, it was determined that Boring MSM-DP-2 was a more suitable background location. Select discrete-depth analytical results for the assigned soil matrix background samples for metals and VOCs are presented in Table 2. The complete analytical results are provided in Appendix H.

Since a hazardous substance source area was not identified during the SI investigation, it was deemed unnecessary for HRS purposes to assign a background sample location for any of the sampled aquifers. Furthermore, due to local variations and uncertainties in the groundwater flow direction within the Gaspur aquifer underlying the site, a Gaspur aquifer background (i.e., upgradient) sample location could not be determined. No samples from the perched aquifer were collected during the SI investigation. See section 4.2.1 for a description of the shallow aquifers underlying the site.

3.2.2 Source Sampling *(See Figures 5 & 6; Tables 2 & 3)*

To establish hazardous substance source areas at the site, WESTON collected subsurface soil matrix samples using direct push (DP) technology from eight selectively-biased on-site boring locations, designated as MSM-DP-1 and MSM-DP-3 through MSM-DP-9. Boring MSM-DP-1 was advanced at the approximate location of the former clarifier. Borings MSM-DP-3, MSM-DP-6, MSM-DP-7, and MSM-DP-9 were advanced at the approximate locations of former metalworking and machining buildings. Borings MSM-DP-4 and MSM-DP-5 were advanced at the approximate location of the former Pratt & Whitney manufacturing building. Boring MSM-DP-8 was advanced at the approximate location of the former 10,000-gallon UST. Source sample locations are presented in Figure 5.

At each source sample boring location, subsurface lithology was logged to 15 ft bgs and soil matrix samples were collected from depths of 2, 5, 10, and 15 ft bgs. The soil lithologies from each boring were relatively consistent with soils composed primarily of light- to dark-brown medium-grained sands through silty sands with interbedded lenses (typically less than 2 ft) of light- to dark-brown sandy silts through silts. In addition, angular gravel, which resembled vitreous slag, was observed in the upper 2 ft at Boring MSM-DP-6. Field observations and subsurface soil descriptions are provided in Appendix I.

Metal Results: *(See Figure 6; Tables 2 & 3)*

Metals identified at concentrations at or above their corresponding action level in soil matrix samples collected during the investigation include antimony, barium, cadmium, and lead. The most elevated metal concentrations were identified in the samples collected from 2 ft bgs. Action levels were assigned per the methodology described in section 3.2.1.

The assigned antimony action level of 0.21 milligrams per kilogram (mg/kg) was exceeded by 4 of the 32 samples with a maximum concentration of 0.47 mg/kg (qualified as estimated – biased low). The assigned barium action level of 576 mg/kg was exceeded by 1 of the 32 samples with a concentration of 1,080 mg/kg. The assigned cadmium action level of 0.82 mg/kg was exceeded by 1 of the 32 samples with a concentration of 1.0 mg/kg. The assigned lead action level of 36 mg/kg was exceeded by 4 of the 32 samples with a maximum concentration of 181 mg/kg (qualified as estimated – biased low). Select analytical results and assigned action levels are presented in Figure 6 and tables 2 and 3.

Volatile Organic Compound (VOC) Results: *(See Figure 6; Tables 2 & 3)*

The only VOC identified at a concentration at or above its corresponding MDL in soil matrix samples collected during the investigation was PCE. In addition, PCE was identified at a concentration above its corresponding action level. Since no VOC analytes were identified in the background soil matrix samples at concentrations exceeding their corresponding MDLs, the reported SQLs of the background samples were assigned as the VOC action levels (see section 3.2.1).

The assigned PCE action level of 5.8 µg/kg was exceeded in 1 of the 32 samples with a concentration of 8.1 µg/kg. This sample was collected from 2 ft bgs at Boring MSM-DP-1, which was located at the approximate location of the former on-site clarifier. Select analytical results and assigned action levels are presented in Figure 6 and tables 2 and 3.

3.2.3 Release Sampling *(See Figures 5 & 6; Table 4)*

To establish a release of one or more hazardous substances from on-site source areas to groundwater beneath the site, WESTON collected discrete-depth groundwater samples from the Gaspur and Exposition aquifers. See section 4.2.1 for a description of the shallow aquifers underlying the site. As part of the investigation, a total of six groundwater samples were collected from three selectively-biased on-site locations using Direct Push (DP) and from one off-site and downgradient location (with respect to the Exposition aquifer) using Cone Penetration Testing (CPT) technology.

For HRS purposes, no action levels are assigned for contaminants identified within the Gaspur or Exposition aquifers beneath the site (see section 3.2.1). For reporting purposes, analyte concentrations are referenced against documented federal and state regulatory benchmarks. Release sample locations are presented in Figure 5.

Three of the six release samples were collected from on-site direct push borings, which included borings MSM-DP-1, MSM-DP-8, and MSM-DP-9. All three of these samples were collected from depths consistent with the Gaspur aquifer. Boring MSM-DP-1 was advanced at the approximate location of the former clarifier. Boring MSM-DP-8 was advanced at the approximate location of the former 10,000-gallon UST. Boring MSM-DP-9 was advanced at the approximate location of a former machining building.

Three of the six release samples were collected from a single CPT boring, MSM-CPT-3. One of the three CPT samples was collected from a depth consistent with the Gaspur aquifer, whereas the remaining two were collected from depths consistent with the Exposition aquifer. Boring MSM-CPT-3 was advanced off site along Patata Street, approximately 200 ft south of the existing M. Stephens Building.

Metal Results: *(See Figure 6; Table 4)*

Metals identified at concentrations at or above their corresponding SQL in groundwater release samples collected during the investigation include antimony, arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, selenium, vanadium, and zinc. The only additional metal analyte identified at a concentration below its SQL but above its MDL was cadmium.

Metals identified in the samples with exceedances of documented federal and state regulatory benchmarks include arsenic and manganese. The most elevated metal concentrations were identified in the samples collected from the Gaspur aquifer at the western portion of the site.

The arsenic federal Maximum Contaminant Level (MCL) of 10 micrograms per liter (µg/L) was exceeded by 1 of the 6 samples with a maximum concentration of 13 µg/L. The manganese California Secondary MCL (CA 2nd MCL) of 50 µg/L was exceeded by 5 of the 6 samples with a maximum concentration of 750 µg/L (qualified as estimated). Select analytical results and benchmarks are presented in Figure 6 and Table 4.

Volatile Organic Compound (VOC) Results: *(See Figure 6; Table 4)*

VOCs identified at concentrations at or above their corresponding SQL in groundwater release samples collected during the investigation include cis-1,2-dichloroethylene (DCE); cyclohexane; trans-1,2-DCE; and TCE. Additional VOC analytes identified at concentrations below their SQL but above their MDL include 1,2-dichloroethane (DCA) and acetone.

The only VOC identified in the samples with an exceedance of a documented federal and/or state regulatory benchmark was TCE. The most elevated VOC concentrations were generally identified in the Gaspur aquifer sample collected from the northwestern portion of the site. The TCE federal MCL (Fed MCL) of 5.0 µg/L was exceeded by 1 of the 6 samples with a concentration of 29 µg/L. Select analytical results and benchmarks are presented in Figure 6 and Table 4.

3.2.4 Secondary Objective Groundwater Sampling and Lithological Profiling
(See Figures 5 & 6; Table 4)

In accordance with the SI's secondary objective (see section 3.2), WESTON collected lithological profiling data and discrete-depth groundwater samples from two on-site locations and two off-site locations using CPT technology. During the investigation, four secondary objective samples were collected from the Gaspur aquifer and eight secondary objective samples were collected from the Exposition aquifer. Borings MSM-CPT-1 and MSM-CPT-2 were advanced along Patata Street to the southeast of the site. Boring MSM-CPT-5 was advanced at the northeastern corner of the site and Boring MSM-CPT-6 was advanced along the northern site boundary at the north-central portion of the site. Secondary objective sample locations are presented in Figure 4.

Metal Results: *(See Figure 6; Table 4)*

Metals identified at concentrations at or above their corresponding SQL in secondary objective groundwater samples collected during the investigation include antimony, arsenic, barium, chromium, cobalt, copper, lead, manganese, nickel, selenium, vanadium, and zinc. Additional metal analytes identified at concentrations below their SQL but above their MDL include beryllium, cadmium, and silver.

Metals identified in the samples with exceedances of documented federal and state regulatory benchmarks include arsenic and manganese. The arsenic Fed MCL of 10 µg/L was exceeded by 1 of the 12 samples with a concentration of 15 µg/L. The manganese CA 2nd MCL of 50 µg/L was exceeded by all 12 of the samples with a maximum concentration of 873 µg/L (qualified as estimated). Select analytical results and benchmarks are presented in Figure 6 and Table 4.

Volatile Organic Compound (VOC) Results: *(See Figure 6; Table 4)*

VOCs identified at concentrations at or above their corresponding SQL in secondary objective groundwater samples collected during the investigation include 1,2-DCA; acetone; cis-1,2-DCE; cyclohexane; methylene chloride; and TCE. Additional VOC analytes identified at concentrations below their SQL but above their MDL include 1,1-DCE and trans-1,2-DCE.

The only VOC identified in the samples with an exceedance of a documented federal and/or state regulatory benchmark was TCE. The TCE Fed MCL of 5.0 µg/L was exceeded by 1 of the 12 samples with a concentration of 11 µg/L. Select analytical results and benchmarks are presented in Figure 6 and Table 4.

3.2.5 Deviations from the SAP

Deviations from the September 2015 M. Stephens SAP (Appendix F) occurred during the field work. The significant deviations approved in the field by the EPA Site Assessment Manager include:

- Only five of the proposed six CPT borings were advanced. Proposed boring MSM-CPT-4 was not advanced due to scheduling constraints and utility conflicts.

- A groundwater release sample from the perched aquifer was not collected at direct push borings MSM-DP-1, MSM-DP-6, MSM-DP-8, or MSM-DP-9 because a water-bearing unit was not identified within the proposed sampling interval.

- A groundwater release sample from the Gaspur aquifer was not collected at direct push boring MSM-DP-6 because of an equipment failure that prevented sample collection.

- The proposed background soil matrix samples were not collected from Boring GIL-CPT-6 during the concurrently-conducted SI investigation at the GENIL site. Soil matrix samples collected from Boring MSM-DP-2, which was located at the central portion of the M. Stephens site, were designated as the background samples.

- CPT borings MSM-CPT-5 and MSM-CPT-6 were designated in the SAP as Exposition aquifer background (i.e., upgradient) locations. However, since an on-site hazardous substance source was not identified during the investigation, it was deemed unnecessary for HRS purposes to assign aquifer background samples. The samples collected from these locations were redesignated as secondary objective samples.

- The Gaspur aquifer groundwater release sample collected from Boring MSM-DP-8 was submitted unpreserved for VOC analysis because the sediment in the sample reacted with the preservative.

- "Special Designation" samples (e.g., Laboratory Quality Control [QC], duplicates, blanks) were reassigned in the field based on actual number and location of collected samples. Final designations are presented in the Sample Nos. – CLP Nos. Correlation Tables (Appendix G).

4.0 HAZARD RANKING SYSTEM FACTORS

4.1 Sources of Contamination *(See Figure 6; Tables 2 & 3)*

For HRS purposes, a source is defined as an area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils that have become contaminated from migration of a hazardous substance.

Based on the results of the 2015 SI investigation, no significant hazardous substances sources were identified at the M. Stephens site. Although slightly elevated concentrations of metals, including antimony, barium, cadmium, and lead; and slightly elevated concentrations of VOCs, including PCE, were identified in the 2-ft bgs samples collected from various locations across the site, these results are not considered to represent a significant source area. In addition, none of the analytes identified at elevated concentrations in on-site soils were identified at elevated concentrations in groundwater release samples, as compared to documented federal and/or state regulatory benchmarks.

4.2 Groundwater Pathway

In determining a score for the groundwater migration pathway, the HRS evaluates: 1) the likelihood that sources at a site actually have released, or potentially could release, hazardous substances to groundwater; 2) the characteristics of the hazardous substances that are available for a release (i.e., toxicity, mobility, and quantity); and 3) the people (targets) who actually have been, or potentially could be, impacted by the release. For the targets component of the evaluation, the HRS focuses on the number of people who regularly obtain their drinking water from wells that are located within 4 miles of the site. The HRS emphasizes drinking water usage over other uses of groundwater (e.g., food crop irrigation and livestock watering), because, as a screening tool, it is designed to give the greatest weight to the most direct and extensively studied exposure routes.

4.2.1 Hydrogeological Setting *(See Table 5)*

The site lies within the Central Subbasin in the Coastal Plain of the Los Angeles Groundwater Basin. The Central Subbasin is generally bound to the north by the folded, uplifted, and eroded Tertiary basement rocks of the La Brea High surface divide; to the northeast and east by the less permeable Tertiary rocks of the Elysian, Repetto, Merced, and Puente Hills; to the southeast by the Coyote Creek flood control channel (approximate Los Angeles County/Orange County boundary); and to the southwest by the Newport Inglewood Uplift, a regional anticline associated with the Newport Inglewood fault system. Geologic units typically found beneath the subbasin include Holocene-age alluvium, the upper Pleistocene Lakewood Formation, and the lower Pleistocene San Pedro Formation. The Los Angeles and San Gabriel rivers pass across the surface of the subbasin, primarily by way of engineered concrete channels, on their way to the Pacific Ocean. The average net annual precipitation in the subbasin is approximately 12 inches (DWR, 1961; DWR, 2004).

The Central Subbasin has historically been divided into four areas: the Los Angeles Forebay at the northwest, the Montebello Forebay at the north, the Whittier Area at the northeast, and the Central Basin Pressure Area at the central and southwest. However, these areal distinctions are appropriate for geographical purposes only and do not accurately represent hydrogeologic conditions within the areas. The hydrogeologic forebays, which are generally characterized by unconfined and relatively interconnected aquifer systems, are limited to small regions within the greater Forebay areas. The Montebello Forebay, as well as the Los Angeles Forebay to a lesser degree, serve as the primary groundwater recharge areas for both shallow and deep aquifers across the entirety of the subbasin. The Central Basin Pressure Area is generally characterized by confined aquifer systems separated by relatively impermeable clay layers, although semipermeable zones within these layers allow aquifers to be interconnected in some areas. These semipermeable zones gradually decrease in frequency and magnitude with increasing distance from the forebays (DWR, 1961; DWR, 2004).

The site is located within the northern portion of the Central Basin Pressure Area geographical area, with the Los Angeles Forebay to the northwest and the Montebello Forebay to the northeast. Groundwater beneath the site is typically found within the coarser-grained sediments of the Holocene alluvium (Gaspur aquifer), the upper Pleistocene Lakewood Formation (Exposition and Gage aquifers), and the lower Pleistocene San Pedro Formation (Hollydale, Jefferson, Lynwood, Silverado, and Sunnyside aquifers). The estimated elevations and depths of the aquifers underlying the site are presented in Table 5. Irregular patches of a perched, or semiperched, aquifer are also present within the Holocene alluvium throughout much of the subbasin. Although significant amounts of water can be found within these perched water-bearing zones, they are often discontinuous over relatively short distances and have historically had only minimal economic benefit. Thus, the perched aquifer does not meet the criteria of an "aquifer" for HRS purposes. These perched zones are typically found between approximately 25 and 45 ft bgs (i.e., between the surface and the top of the Gaspur aquifer) (DWR, 1961; DWR, 2004).

For the purposes of this SI, the Gaspur aquifer beneath the site is defined as being between 55 and 75 ft bgs. Water-bearing units identified at shallower depths are defined as being associated with one or more perched (or semiperched) aquifers. The Exposition aquifer is defined as being between 75 and 170 ft bgs; however, the base of this aquifer is considered approximate because no information was found regarding site-specific lithology below approximately 135 ft bgs. These designations were assigned primarily based on CPT lithological profile reports that were developed both during and prior to the completion of the SI investigation. A more comprehensive study of the lithological sediments in the 75 to 100 ft bgs zone beneath the site would be required to ascertain whether the water-bearing zones in this range are most appropriately associated with the hydrogeologic conditions of the Gaspur or Exposition aquifers. The CPT Lithological Profile Reports developed during the M. Stephens SI investigation are presented in Appendix E.

Throughout much of the subbasin, the Pleistocene-age aquifers are under confined conditions due to the presence of fine-grained, low-permeability interbedded sediments. Although these fine-grained sediments, or aquicludes, generally restrict the downward migration of groundwater from overlying aquifers, semipermeable zones within the aquicludes allow aquifers to be interconnected in some areas. In addition, hydrogeologic modeling of multi-aquifer systems

similar to those found in the Central Basin Pressure Area, indicates that groundwater wells screened across multiple aquifers (or wells with improperly constructed annular seals that cross multiple aquifers) can act as a direct pathway for the migration of significant volumes of shallow groundwater into deep confined aquifers when vertical hydraulic head variations create a downward hydraulic gradient. The process of this downward migration is increased in areas where the deeper aquifers have periods of high-volume pumping such as seasonal demand. Furthermore, additional studies have shown that liquids that are denser than water (i.e., dense non-aqueous phase liquids such as TCE and PCE) can migrate downward through a multi-aquifer well even when vertical hydraulic head variations create an upward hydraulic gradient. As of the end of the 2012-2013 fiscal year, there were 537 known extraction wells (306 active and 231 inactive) within the subbasin (AwwaRF, 2006; DWR, 1961; DWR, 2013; Johnson et al., 2011).

The State of California, Department of Water Resources' Bulletin No. 104 (*Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County*) – Appendix A presents "idealized" geologic cross-sections transecting the Central Subbasin. These cross-sections indicate apparent areas of merged aquifers near the site, including approximately 0.5 mile west (Gaspur-Exposition), at the southwestern portion of the site (Exposition-Gage), and approximately 0.75 mile east-southeast (Lynwood-Silverado). Aquifer interconnection within 2 miles of the site has been documented between the Gaspur through Gage and between the Lynwood through Silverado. Aquifer interconnections within 2 miles of the site have been established neither between the Gage through Jefferson, the Jefferson and Lynwood, nor the Silverado and Sunnyside (DWR, 1961).

The regional groundwater flow direction within the subbasin, which was calculated using data from wells screened within the upper San Pedro Formation (Lynwood and Silverado aquifers), is generally to the southwest with local and temporal variations from approximately west-southwest to southeast. Based upon data collected between 2007 and 2016, flow within these deeper aquifers near the site trended towards the west-southwest with temporal variations from west to south-southwest (WRD, 2017).

The groundwater flow direction within the perched aquifer at the site is not known. Because of the highly irregular and discontinuous nature of these perched water-bearing zones, the flow direction is estimated to be highly variable and the calculation of a meaningful flow direction would likely require a separate and specialized investigation.

The groundwater flow direction within the Gaspur aquifer at the site is also not known. Monitoring wells screened within the Gaspur aquifer at the Brenntag Pacific, Inc. (Brenntag) facility, which is located approximately one-quarter mile west-northwest of the M. Stephens site, were measured during semiannual sampling events conducted between approximately 2010 and 2016. Calculations based on these measurements were generally inconsistent and often resulted in conflicting flow directions. Based on this information, the flow directions within the Gaspur aquifer at the M. Stephens site are expected to be similarly variable and flow directions calculated on nearby properties should not be extrapolated to the site (ARCADIS, 2017).

The groundwater flow direction within the Exposition aquifer at the site is estimated to be towards the southwest. This estimated flow direction is based on monitoring well depth-to-water measurements collected from wells screened within the Exposition aquifer at the Brenntag facility between approximately 2010 and 2016 (ARCADIS, 2017).

During the SI investigation, the subsurface geology at the site was logged to a depth of 15 ft bgs, the base of continuous coring. Subsurface materials primarily consisted of light- to dark-brown medium-grained sands through silty sands with interbedded lenses (typically less than 2 ft) of light- to dark-brown sandy silts through silts. The lithological identifications are described in the sample log book (Appendix I). Additionally, during the SI investigation, CPT technology was used to estimate the subsurface lithology to a total depth of approximately 135 ft bgs. The interpreted Soil Behavior Type generated from the CPT generally indicated sand units from 30 to 38 ft bgs, 58 to 70 ft bgs, 75 to 90 ft bgs, and 119 to 135 ft bgs. Between these sand units, the soils were generally composed of silts and clays with thin (i.e., less than 2 ft) interbedded lens of coarser-grained materials. The CPT Lithological Profile Reports are presented in Appendix E.

4.2.2 Groundwater Targets

The nearest HRS-eligible drinking water well to the site is Well 03. This well is operated by the Tract 349 Mutual Water Company (MWC) and is located approximately 0.26 mile to the northwest of the site. Routine water quality sampling of this well has not reported elevated concentrations of AOCs, including TCE, PCE, arsenic, or chromium. Well 03 is a multi-aquifer well with six distinct screening intervals that correlate to the estimated depths of the Silverado and Sunnyside aquifers (BBD, 1948; DWR, 1961; RWQCB, 2015; Weston, 2016).

The City of South Gate's Well 7 was a public supply well located approximately 0.2 mile south of the site, which was removed from service in approximately 2002 and destroyed in approximately 2011 due primarily to elevated concentrations of arsenic, chromium (including hexavalent chromium), and TCE. The maximum reported arsenic concentration of 15.1 µg/L was identified in December 1997. The maximum reported chromium concentration (primarily of the hexavalent species) of 86 µg/L was identified in August 2000. This well had exhibited elevated PCE and TCE concentrations since at least 1985. The maximum reported PCE concentration of 3.8 µg/L and TCE concentration of 14 µg/L were both identified during the most recent recorded sampling in October 2001. Well 7 was a single-aquifer well with a sole screening interval that correlated to the estimated depths of the Lynwood aquifer (DWR, 1948; DWR, 1961; RWQCB, 2015; Weston, 2016; Appendix C-2).

The Golden State Water Company (GSWC) - Bell/Bell Gardens system's Hoffman Well 02 was a public supply well located approximately 0.3 mile east-northeast of the site, which was removed from service in approximately 2000 and subsequently destroyed in approximately 2007 due primarily to elevated concentrations of chromium. The maximum reported chromium concentration of 333 µg/L was identified in November 2000. This well had consistently exhibited detectable, but relatively low, concentrations of PCE since at least 1985 and had exhibited elevated TCE concentrations since at least 1985. PCE concentrations gradually began increasing in approximately 1990. The maximum reported PCE concentration of 5.7 µg/L was identified in

November 2000. The maximum reported TCE concentration of 15.3 µg/L was identified in November 1996. Hoffman Well 02 was a single-aquifer well with three distinct screening intervals (437 to 444, 454 to 476, and 477 to 494 ft bgs) that correlated to the estimated depths of the Lynwood aquifer (DWR, 1961; RWQCB, 2015; Weston, 2016; Appendix C-3).

The Fed MCL for arsenic is 10 µg/L, for chromium is 100 µg/L, for PCE is 5.0 µg/L, and for TCE is 5.0 µg/L.

There are 85 known active drinking water wells, 4 known maintained-standby wells, and 32 known inactive (i.e., inactive, destroyed, or abandoned) wells located within the target distance limit (TDL) (i.e., 4 miles of established on-site sources). Water purveyors known to operate wells within the TDL include Tract 349 MWC, City of Huntington Park, City of South Gate, Tract 180 MWC, GSWC – Bell/Bell Gardens, Maywood MWC No. 3, Rancho Los Amigos Hospital, City of Downey, City of Bell Gardens, Maywood MWC No. 1, City of Lynwood, Maywood MWC No. 2, GSWC – Hollydale, Walnut Park MWC, City of Vernon, City of Commerce, City of Compton, CalWater Service – East Los Angeles (ELA), GSWC – Florence/Graham, Lynwood Park MWC, GSWC – Willowbrook, Park Water Company (PWC) (Liberty) – Compton/Willowbrook, and Sativa LA Central Water District (CWD). Additional service information for these purveyors is presented in Table 6 (Weston, 2016).

4.2.3 Groundwater Pathway Conclusion *(See Figures 5 & 6; Tables 4 through 6)*

A release of hazardous substances from the site to groundwater has not been established. For HRS purposes, a release to groundwater is established when a hazardous substance is detected in a hydraulically downgradient well at a concentration significantly above background levels, and some portion of the release is attributable to the site. A hazardous substance is considered to be present at a concentration significantly above background levels when one of the following two criteria is met: (1) the hazardous substance is detected in the contaminated (i.e., release) sample, when not detected in the background samples or (2) the hazardous substance is detected in the release sample at a concentration equal to or greater than three times the maximum background level, when detected in the background samples.

Release samples collected during the M. Stephens 2015 SI sampling event from within the Gaspur aquifer exhibited concentrations of arsenic, manganese, and TCE that exceeded documented federal and/or state regulatory benchmarks (i.e., Fed MCL, CA 2nd MCL). However, since an on-site hazardous substance source has not been documented, and since the hydraulic gradient of the Gaspur aquifer beneath the site has not been adequately defined, appropriate background concentrations for these analytes could not be assigned and a release to the Gaspur aquifer cannot be established.

With the exception of manganese, release samples collected during the M. Stephens 2015 SI sampling event from within the Exposition aquifer did not exhibit concentrations of metals or VOCs that exceeded documented federal and/or state regulatory benchmarks. In addition, since an on-site hazardous substance source has not been documented, it was deemed unnecessary for HRS

purposes to assign an Exposition aquifer background sample location (see section 3.2.1). Based on this information, a release to the Exposition aquifer cannot be established.

The geologic materials between the ground surface at the site and the top of the deepest identified aquifer, the Sunnyside, are generally characterized by confined aquifer systems, which are composed of relatively permeable sands through gravels and are separated by relatively impermeable clay through silt layers; although semipermeable zones within these layers allow one or more aquifers to be interconnected in some areas. The estimated elevations and depths of the aquifers underlying the site are presented in Table 5. There are 85 known active drinking water wells within 4 miles of the site. These wells, which are operated by 23 distinct water purveyors, serve an apportioned population of approximately 575,000 (CTE, 2011; CWS, 2016; DWR, 1961; KJC, 2016a; KJC, 2016b; MWM, 2016; RMP, 2011; SAA, 2011; SEI, 2012; SWRCB, 2017; Weston, 2016).

4.3 Surface Water Pathway

To determine the score for the surface water pathway, the HRS evaluates: 1) the likelihood that sources at a site actually have released, or potentially could release, hazardous substances to surface water (e.g., streams, rivers, lakes, and oceans); 2) the characteristics of the hazardous substances that are available for a release (i.e., toxicity, persistence, bioaccumulation potential, and quantity); and 3) the people or sensitive environments (targets) who actually have been, or potentially could be, impacted by the release. For the targets component of the evaluation, the HRS focuses on drinking water intakes, fisheries, and sensitive environments associated with surface water bodies within 15 miles downstream of the site.

Surface water runoff from the M. Stephens site is expected to infiltrate into the unpaved surfaces of the site with the excess flowing into curbside municipal stormwater drains located on adjacent public roadways (i.e., Atlantic Avenue and/or Patata Street). The nearest surface water body to the site is the Los Angeles River, which is located approximately 0.6 mile east of the site. The Los Angeles River is highly modified, having been lined with concrete along most of its length by the U.S. Army Corps of Engineers in the 1950s. Flows in the river are dominated by urban runoff and tertiary-treated effluent from several municipal wastewater treatment plants. The river empties into the Pacific Ocean at San Pedro Bay approximately 13.5 miles downstream of the site. There are no surface water intakes, fisheries, or sensitive environments associated with the Los Angeles River downstream of the site; however, there is a potential for fisheries and/or recreational areas to exist within San Pedro Bay (Google, 2017; RWQCB, 1994).

4.4 Soil Exposure and Air Migration Pathways

In determining the score for the soil exposure pathway, the HRS evaluates: 1) the likelihood that there is surficial contamination associated with the site (e.g., contaminated soil that is not covered by pavement or at least 2 feet of clean soil); 2) the characteristics of the hazardous substances in the surficial contamination (i.e., toxicity and quantity); and 3) the people or sensitive environments (targets) who actually have been, or potentially could be, exposed to the contamination. For the targets component of the evaluation, the HRS focuses on populations that are regularly and

currently present on or within 200 feet of surficial contamination. The four populations that receive the most weight are residents, students, daycare attendees, and terrestrial sensitive environments.

In determining the score for the air migration pathway, the HRS evaluates: 1) the likelihood that sources at a site actually have released, or potentially could release, hazardous substances to ambient outdoor air; 2) the characteristics of the hazardous substances that are available for a release (i.e., toxicity, mobility, and quantity); and 3) the people or sensitive environments (targets) who actually have been, or potentially could be, impacted by the release. For the targets component of the evaluation, the HRS focuses on regularly occupied residences, schools, and workplaces within 4 miles of the site. Transient populations, such as customers and travelers passing through the area, are not counted.

There are no known residences, schools, daycare facilities, or sensitive environments on site. In addition, the site is fenced. The majority of the surface of the site was either unpaved or covered by heavily-weathered asphalt. The nearest residential property to the site was located approximately 0.18 mile north. There are no regularly occupied workplaces on site (Google, 2017; Appendix B).

4.5 Hazard Ranking System Summary *(See Figures 5 & 6; Tables 2 through 6)*

On-site soil matrix samples collected during the 2015 SI investigation exhibited concentrations of metals, specifically antimony, barium, cadmium, and lead, and VOCs, specifically PCE, that exceeded assigned site-specific action levels. However, these elevated concentrations were limited to near-surface samples (i.e., 2 ft bgs), the exhibited concentrations only slightly exceeded action levels; and none of these analytes were identified at elevated concentrations, as compared to documented federal and/or state regulatory benchmarks, in on-site groundwater samples. Therefore, these results are not considered to represent a significant metal or VOC source area. For HRS purposes, no on-site hazardous substance sources are considered adequately documented.

Groundwater release samples collected from the Gaspur aquifer during the investigation exhibited concentrations of metals, specifically arsenic and manganese; and VOCs, specifically TCE, that exceeded documented federal and/or state regulatory benchmarks. Groundwater release samples collected from the Exposition aquifer during the investigation exhibited concentrations of metals, specifically manganese, that exceeded documented federal and/or state regulatory benchmarks. However, groundwater action levels were not assigned for HRS purposes in either aquifer since an on-site source was not documented (see Section 3.2.1).

The following primary HRS factors are associated with the site:

- Hazardous substance sources at the site have not been documented based on the results of the 2015 SI investigation. Consequently, a release of hazardous substances from the site to groundwater cannot be established.

- Aquifer interconnection within 2 miles of the site has not been adequately documented between the Exposition through Silverado aquifers.

- The geologic materials between the site surface and the top of the Silverado aquifer are generally characterized by approximately 550 ft of relatively permeable sands and gravels and approximately 500 ft of less permeable clays and silts.

- The nearest drinking water well is located between one-quarter mile and one-half mile from the site.

- Drinking water wells within 4 miles of the site serve an apportioned population of approximately 575,000.

The following secondary HRS factors are associated with the site:

- No drinking water intakes are associated with surface water within 15 miles downstream of the site. However, there is the potential for fisheries and/or sensitive environments associated with the Pacific Ocean to exist within this target distance limit.

- There are no residences, schools, daycare centers, or sensitive environments on site. The nearest identified residential property to the site is located approximately 0.18 mile north.

- There are no regularly occupied workplaces on site.

- The site is fenced and is generally inaccessible to the public.

- The surface of the site is unpaved and/or covered by weathered pavement.

5.0 REMOVAL EVALUATION CONSIDERATIONS

The National Contingency Plan [40 CFR 300.415 (b) (2)] authorizes EPA to consider emergency response actions at those sites that pose an imminent threat to human health or the environment. For the following reasons, a referral to Region 9's Emergency Response Office does not appear to be necessary (Google, 2017; Appendix B):

- The site is fenced and generally inaccessible to the public.

- No significant hazardous substance source areas were identified at the site during the SI.

6.0 REFERENCES

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Tables

Table 1: Current and Historical On-site Operators

Location	Operator	Primary Operations	Date
East Site *6224-034-010 (full)*	Jackson Iron Works	Metal fabrication	~1948 ~ 1971
	Grating Pacific	Metal fabrication	~1981 - 1986
	Plasma Specialist	Metal fabrication	~1981 - 1986
Southeast Site *6224-034-036 (partial)*	Patata Engineered Wire & Metal Mfg.	Metal fabrication	~1952
	Automatic Instrument Service	Instrument Control Device Repair	~1958 ~ 1965
Central Site *6224-034-900 (partial)* *6224-034-036 (partial)*	Martin Electric Motors	Electric Parts Service and Sales	~1952 ~ 1965
	Jackson Iron Works	Metal fabrication	~1965
Southwest Site *6224-034-901 (full)* *6224-034-903 (partial)*	Martin Electric Motors	Electric equipment storage	~1955 ~ 1968
Northern and west-central Site *6224-034-037 (full)* *6224-034-039 (full)* *6224-034-902 (full)* *6224-034-010 (partial)* *6224-034-036 (partial)* *6224-034-903 (partial)*	Greer Machine Company	Machining and aluminum casting	~1958 ~ 1962
	Pratt & Whitney Tool Co.	Tool Manufacturing	~1962 ~ 1975
	Trico Superior	Metal Tank Manufacturing	~1965 - 1980
	Sierra Tank & Construction Co.	Metal Tank Manufacturing	1980 ~ 1985
Site-wide	*Unknown*	Residential and Agriculture	~1900 ~ 1948
	M. Stephens Manufacturing Co.	Metal electrical equipment mfg.	1986 - 2003
	Unknown	Tractor-trailer storage	2009

References: TSD, 1980; Weston, 2015.

Table 2: Western Site Source Sampling Results for Select Metals and VOCs

Sample Location	Sample Depth (ft bgs)	Metals (mg/kg)							VOCs (µg/kg)		
		Antimony	Arsenic	Barium	Cadmium	Chromium	Lead	Manganese	1,2-DCA	PCE	TCE
Benchmarks and Action Levels											
Residential RSL		31	0.68	15,000	71	--	400	1,800	460	24,000	940
MCL-based SSL		0.27	0.29	82	--	180,000	14	--	1.4	2.3	1.8
HRS SEP Benchmark		30	0.77	10,000	30	200	--	10,000	7,600	330,000	8,800
Action Level (1)		**0.21**	**14**	**576**	**0.82**	**76**	**36**	**1,828**	**5.8**	**5.8**	**5.8**
Background Samples											
MSM-DP-2	2	0.07 J-	1.8 J-	135	0.17 J	16	7.7 J-	381	5.7 U	5.7 U	5.7 U
	5	1.0 UJ	3.0 J-	69	0.05 J	9.9	5.2 J-	203	5.2 U	5.2 U	5.2 UJ
	10	0.90 UJ	0.87 J-	78	0.04 J	7.5	1.8 J-	215	4.9 U	4.9 U	4.9 U
	15	1.1 UJ	1.9 J-	115	0.11 J	16	4.1 J-	395	5.8 U	5.8 U	5.8 U
Source Samples											
MSM-DP-1	2	**0.32 J-**	3.6 J-	151	0.34 J	18	**67 J-**	348	5.4 U	**8.1**	5.4 U
	5 (2)	0.91 UJ	1.3 J-	69 J	0.46 U	8.6 J	2.3 J-	213 J	5.0 U	5.0 U	5.0 U
	10	1.1 UJ	1.5 J-	128	0.14 J	16	4.4 J-	293	5.1 U	5.1 U	5.1 U
	15	0.97 UJ	1.0 J-	76	0.05 J	8.8	2.4 J-	274	6.0 U	6.0 U	6.0 U
MSM-DP-4	2	**0.30 J-**	3.1 J-	132	0.65	14	**181 J-**	328	5.2 U	5.2 U	5.2 U
	5	0.95 UJ	1.0 J-	82	0.13 J	11	6.8 J-	242	5.1 U	5.1 U	5.1 U
	10	0.92 UJ	0.73 J-	51	0.03 J	6.0	1.4 J-	213	5.1 U	5.1 U	5.1 U
	15	0.89 UJ	0.90 J-	67	0.44 U	6.7	1.7 J-	195	4.9 U	4.9 U	4.9 U
MSM-DP-8	2	**0.46 J-**	2.8 J-	**1,080**	0.34 J	16	**38 J-**	280	5.2 U	5.2 U	5.2 U
	5	0.92 UJ	1.5 J-	118	0.08 J	15	3.2 J-	352	5.6 U	5.6 U	5.6 U
	10	0.10 J-	1.3 J-	117	0.11 J	14	12 J-	322	6.2 U	6.2 U	6.2 U
	15	0.88 UJ	0.84 J-	61	0.03 J	7.6	1.5 J-	183	4.9 U	4.9 U	4.9 U
MSM-DP-9	2	0.13 J-	1.9	128 J	1.0 UJ	19 J	12	405 J	4.7 U	4.7 U	4.7 U
	5	0.71 UJ	0.95	55 J	0.71 U	6.8 J	2.3	152 J	4.5 U	4.5 U	4.5 U
	10	0.89 UJ	0.94	77 J	0.45 U	6.8 J	1.9	202 J	4.5 U	4.5 U	4.5 U
	15	1.0 UJ	3.0	134 J	1.0 U	19 J	4.3	426 J	5.0 U	5.0 U	5.0 U

Notes: Values in Bold exceed Action Level
Values in Shaded cells exceed ten times Action Level
Samples collected in November, 2015
1 = Per the HRS, the action level to establish an on-site source of contaminated soil is "significantly above background," which is defined as three times the background concentration (See section 3.2.1)
2 = Duplicate Sample collected; greater result is presented

Definitions:
DCA = Dichloroethane
ft bgs = feet below ground surface
HRS = Hazard Ranking System
MCL = Federal Maximum Contaminant Level
mg/kg = milligrams per kilogram
PCE = Tetrachloroethylene
RSL = Regional Screening Level
SEP = Soil Exposure Pathway
SSL = Soil Screening level
TCE = Trichloroethylene
µg/kg = micrograms per kilogram

Data Qualifier Definitions:
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+ = The result is an estimated quantity, but the result may be biased high.
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R = The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
U = The analyte was analyzed for, but was not detected above the level of the reported Sample Quantitation Limit (SQL).
UJ = The analyte was analyzed for, but was not detected. The reported SQL is approximate and may be inaccurate or imprecise.

Complete analytical results are presented in Appendix H

Table 3: Eastern Site Source Sampling Results for Select Metals and VOCs

Sample Location	Sample Depth (ft bgs)	Metals (mg/kg)							VOCs (µg/kg)		
		Antimony	Arsenic	Barium	Cadmium	Chromium	Lead	Manganese	1,2-DCA	PCE	TCE
Benchmarks and Action Levels											
Residential RSL		31	0.68	15,000	71	--	400	1,800	460	24,000	940
MCL-based SSL		0.27	0.29	82	--	180,000	14	--	1.4	2.3	1.8
HRS SEP Benchmark		30	0.77	10,000	30	200	--	10,000	7,600	330,000	8,800
Action Level (1)		**0.21**	**14**	**576**	**0.82**	**76**	**36**	**1,828**	**5.8**	**5.8**	**5.8**
Background Samples											
MSM-DP-2	2	0.07 J-	1.8 J-	135	0.17 J	16	7.7 J-	381	5.7 U	5.7 U	5.7 U
	5	1.0 UJ	3.0 J-	69	0.05 J	9.9	5.2 J-	203	5.2 U	5.2 U	5.2 UJ
	10	0.90 UJ	0.87 J-	78	0.04 J	7.5	1.8 J-	215	4.9 U	4.9 U	4.9 U
	15	1.1 UJ	1.9 J-	115	0.11 J	16	4.1 J-	395	5.8 U	5.8 U	5.8 U
Source Samples											
MSM-DP-3	2	0.14 J-	2.2	157 J	0.90 U	21 J	7.9	449 J	5.1 UJ	5.1 U	5.1 U
	5 (2)	0.06 J-	1.0	84 J	0.89 U	13 J	3.4	254 J	5.5 U	5.5 U	5.5 U
	10	0.99 UJ	0.93	79 J	0.99 U	11 J	2.4	290 J	5.4 U	5.4 U	5.4 U
	15	0.12 J-	2.6	207 J	0.47 UJ	26 J	8.2	585 J	5.4 U	5.4 U	5.4 U
MSM-DP-5	2	**0.47 J-**	2.6	143 J	**1.0**	21 J	**42**	422 J	5.3 U	5.3 U	5.3 U
	5	0.10 J-	2.7	188 J	1.1 UJ	23 J	5.9	420 J	5.3 U	5.3 U	5.3 U
	10	0.10 J-	1.7	143 J	1.1 UJ	23 J	4.5	545 J	5.3 U	5.3 U	5.3 U
	15	0.96 UJ	1.1	87 J	0.96 U	11 J	2.3	280 J	5.1 U	5.1 U	5.1 U
MSM-DP-6	2	1.1 UJ	1.3 J-	113	0.10 J	14	3.8 J-	371	5.4 U	5.4 U	5.4 U
	5	1.0 UJ	0.83 J-	55	0.03 J	7.2	2.5 J-	188	5.0 U	5.0 U	5.0 U
	10	0.96 UJ	0.76 J-	67	0.48 U	9.4	1.7 J-	191	5.1 U	5.1 U	5.1 U
	15	1.0 UJ	2.7 J-	151	0.13 J	18	4.9 J-	467	5.8 U	5.8 U	5.8 U
MSM-DP-7	2	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	5 (2)	0.06 J-	1.3	111 J	1.0 U	15 J	6.4	292 J	4.7 U	4.7 U	4.7 U
	10	0.09 J-	1.8	139 J	0.42 UJ	18 J	4.8	376 J	5.2 U	5.2 U	5.2 U
	15	0.97 UJ	0.70	67 J	0.49 U	6.9 J	1.7	194 J	4.5 U	4.5 U	4.5 U

Notes: Values in Bold exceed Action Level
Values in Shaded cells exceed ten times Action Level
Samples collected in November, 2015
1 = Per the HRS, the action level to establish an on-site source of contaminated soil is "significantly above background," which is defined as three times the background concentration (See section 3.2.1)
2 = Duplicate Sample collected; greater result is presented

Definitions:
DCA = Dichloroethane
ft bgs = feet below ground surface
HRS = Hazard Ranking System
MCL = Federal Maximum Contaminant Level
mg/kg = milligrams per kilogram
PCE = Tetrachloroethylene
RSL = Regional Screening Level
SEP = Soil Exposure Pathway
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U = The analyte was analyzed for, but was not detected above the level of the reported Sample Quantitation Limit (SQL).
UJ = The analyte was analyzed for, but was not detected. The reported SQL is approximate and may be inaccurate or imprecise.

Complete analytical results are presented in Appendix H

Table 4: Groundwater Sampling Results for Select Metal and VOC Analytes

Sample Location	Sample Depth (ft bgs)	Antimony	Arsenic	Barium	Cadmium	Chromium	Lead	Manganese	1,2-Dichloroethane	Tetrachloroethylene	Trichloroethylene
		Sb	As	Ba	Cd	Cr	Pb	Mn	1,2-DCA	PCE	TCE
Benchmark:		**6.0**	**10**	**2,000**	**5.0**	**100**	**15**	**50 (1)**	**5.0**	**5.0**	**5.0**
Benchmark Source:		Fed MCL	Fed MCL	Fed MCL	Fed MCL	Fed MCL	Fed MCL	CA 2nd MCL	Fed MCL	Fed MCL	Fed MCL
Release Sample Locations											
MSM-DP-1	68 (2)	0.88 J	6.6	87 J	1.0 U	1.0 U	0.33 J	462 J	0.27 J	0.50 U	0.50 U
MSM-DP-8	64	1.1 J	5.5	162 J	0.10 J	3.6	2.3	**750 J**	0.50 U	0.50 U	0.50 U
MSM-DP-9	64	0.49 J	**13**	129	1.0 U	2.0 U	0.12 J	428	0.50 U	0.50 U	**29**
MSM-CPT-3	64 (2)	0.36 J	3.1	69 J	1.0 U	2.0 U	1.0 U	181 J	0.3 J	0.50 U	0.50 U
	86	0.13 J	0.79 J	104 J	1.0 U	2.0 U	1.0 U	237 J	0.50 U	0.50 U	0.50 U
	128	2.4	6.2	77 J	1.0 U	2.0 U	1.0 U	29 J	0.50 U	0.50 U	0.50 U
Secondary Objective Sample Locations											
MSM-CPT-1	66	1.1 J	4.3	64	1.0 U	2.0 U	0.11 J	81	0.50 U	0.50 U	**11**
	89	0.72 J	5.2	103	1.0 U	1.3 J	0.28 J	364	4.1	0.50 U	0.50 U
	118	0.74 J	1.4	128	1.0 U	1.3 J	0.10 J	129	0.50 U	0.50 U	0.50 U
MSM-CPT-2	65	0.82 J	3.6	91	0.07 J	3.6	0.76 J	214	0.50 U	0.50 U	0.50 U
	88	0.74 J	2.7	86	1.0 U	2.0 U	1.0 U	281	0.50 U	0.50 U	0.50 U
	123	0.82 J	1.5	95	1.0 U	8.3	0.52 J	97	0.50 U	0.50 U	0.50 U
MSM-CPT-5	71	1.8 J	**15**	136 J	1.0 U	2.0 U	1.0 U	**775 J**	0.25 J	0.50 U	0.50 U
	93	0.51 J	2.3	212 J	1.0 U	2.0 U	1.0 U	**873 J**	0.50 U	0.50 U	0.50 U
	123	0.52 J	3.5	110 J	1.0 U	0.92 J	1.2	163 J	0.50 U	0.50 U	0.50 U
MSM-CPT-6	64	3.9	9.5	186	0.12 J	13	3.9	**717**	0.40 J	0.50 U	0.50 U
	88	0.49 J	0.80 J	182	1.0 U	0.24 J	0.13 J	364	0.50 U	0.50 U	0.50 U
	128	1.5 J	4.9	200	1.0 U	14	1.9	312	0.50 U	0.50 U	0.50 U

Notes: Values in Bold exceed Benchmark
Values in Shaded cells exceed ten times Benchmark
All results reported in micrograms per liter (µg/L)
Samples collected in November, 2015
1 = Manganese exceedances are presented as 10 times reference benchmark
2 = Duplicate Sample collected; greater result is presented

Definitions:
CA 2nd MCL = California Secondary Maximum Contaminant Level
Fed MCL = Federal Maximum Contaminant Level
ft bgs = feet below ground surface

Data Qualifier Definitions:
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+ = The result is an estimated quantity, but the result may be biased high.
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R = The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
U = The analyte was analyzed for, but was not detected above the level of the reported Sample Quantitation Limit (SQL).
UJ = The analyte was analyzed for, but was not detected. The reported SQL is approximate and may be inaccurate or imprecise.

Complete analytical results are presented in Appendix H

Table 5: Bulletin 104 Aquifer Elevations near Site

Aquifer	Estimated Elevation (ft amsl)		Estimated Depth (ft bgs)	
	Top	Base	Top	Base
Gaspur	75	50	30	55
Exposition	25	-65	80	170
Gage	-80	-140	185	245
Hollydale	-200	-245	305	350
Jefferson	-290	-350	395	455
Lynwood	-380	-460	485	565
Silverado	-490	-695	595	800
Sunnyside	-970	-1225	1075	1330

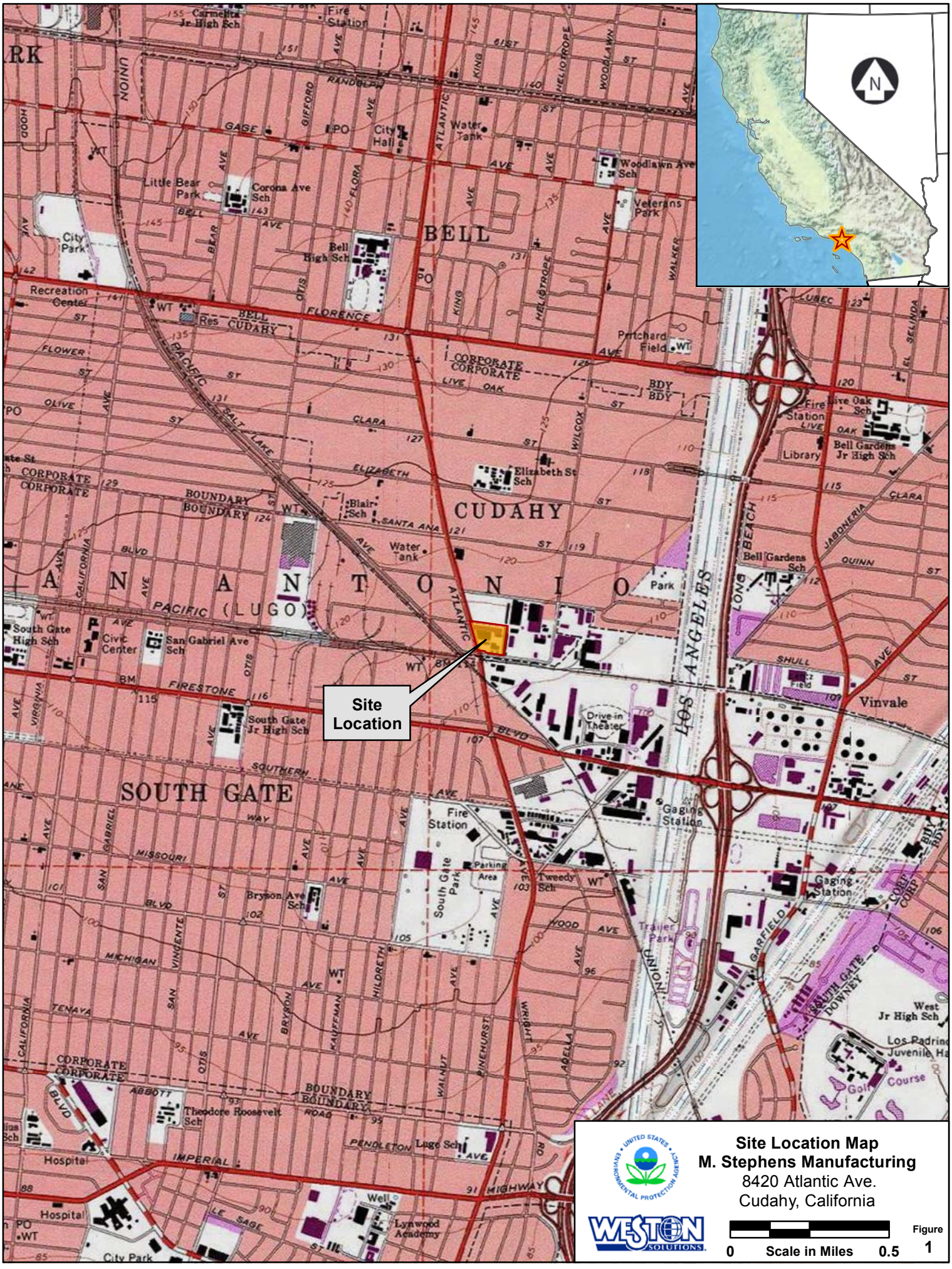
Definitions:
amsl = above mean sea level
bgs = below ground surface
ft = feet
References:
DWR, 1961

Table 6: Water Purveyors Operating Active Wells Within the Target Distance Limit

Water Company Name	No. of Wells in System[1]	Total Population Served	Percent Groundwater	No. of Wells Within 4 Miles[1]	Direction from site (approx.)
Tract 349 MWC	2	7,500	99%	2	NW
City of Huntington Park	5	17,246	72%	5	NW
City of South Gate	7	96,057	99%	7	W-SW-S-SE
Tract 180 MWC	2	14,000	100%	2	N
GSWC - Bell, Bell Gardens	5	58,048	97%	5	NW-N-NE
Maywood MWC #3	2	9,500	92%	2	NNE
Rancho Los Amigos Hospital	3	8,800	100%	3	SE
City of Downey	20	112,585	100%	16	ENE-E-ESE
City of Bell Gardens	1	11,879	100%	1	ENE
Maywood MWC #1	2	3,619	95%	2	NNW
City of Lynwood	5	65,965	98%	5	SSW-SW
Maywood MWC #2	2	6,700	80%	2	NNW
GSWC – Hollydale	2	7,666	100%	2	SSE
Walnut Park MWC	3	16,180	73%	3	WNW
City of Vernon	7	45,000	84%	5	NNW
City of Commerce	2	3,828	100%	2	NE
City of Compton	7	81,965	71%	3	SW
CalWater Service – ELA	9	150,729	63%	5	NNE-NE
GSWC – Florence/Graham	7	65,182	82%	6	WNW
Lynwood Park MWC	3	2,300	100%	3	SW
GSWC – Willowbrook	2	10,682	> 60%	2	SW
PWC – Compton/Willowbrook	1	24,698	64	1	SW
Sativa LA CWD	3	6,837	100%	1	SW

Footnotes:
1 = Does not include standby wells
References:
CTE, 2011; CWS, 2016; KJC, 2016a; KJC, 2016b; MWM, 2016; RMP, 2011; SAA, 2011; SEI, 2012; SWRCB, 2017; Weston, 2016

Figures

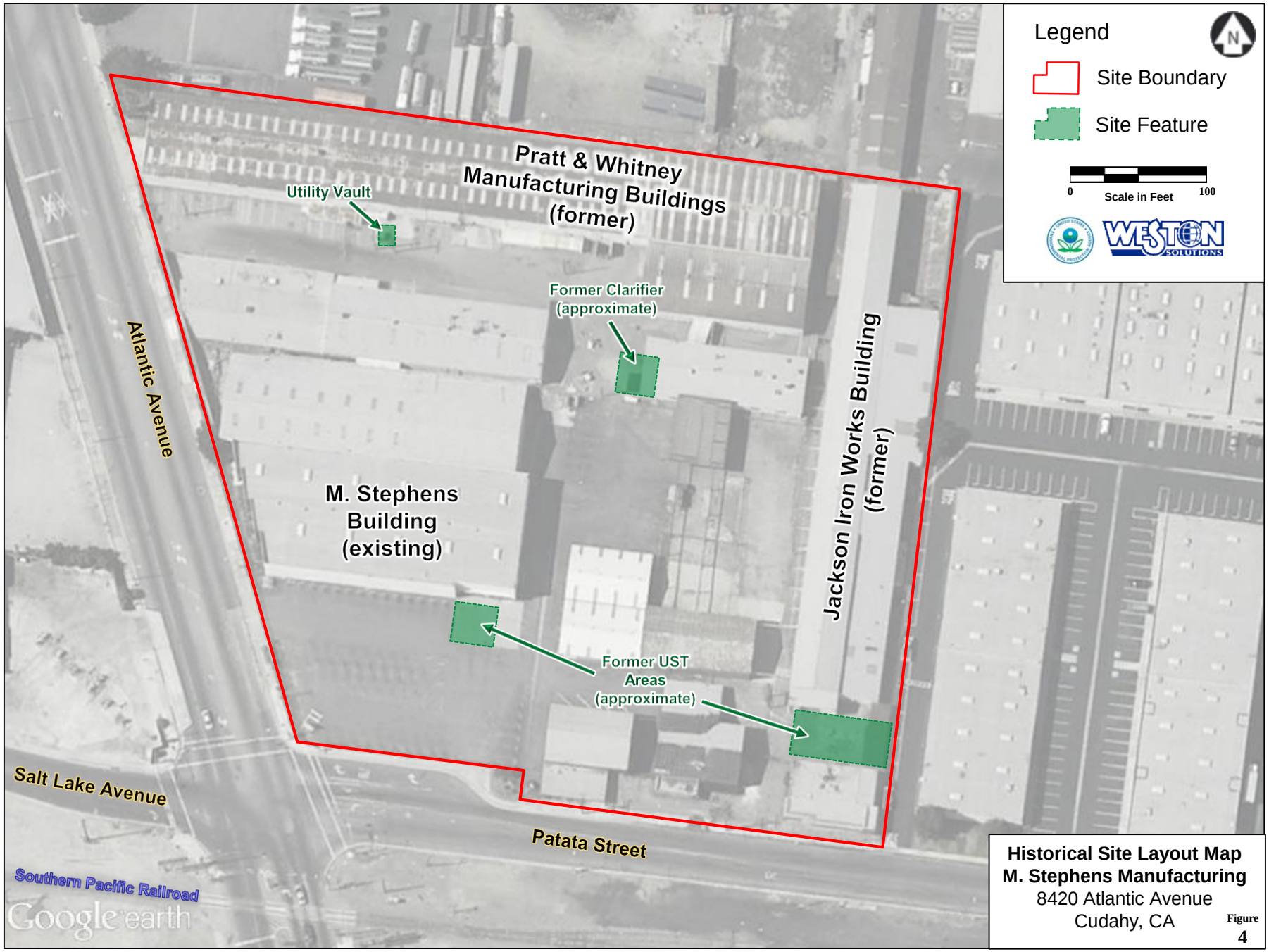

Site Location
BELL
CUDAHY
SOUTH GATE
Fire Station
Carmelita Jr High Sch
Little Bear Park
Corona Ave Sch
City Park
Bell High Sch
Recreation Center
City Hall
Water Tank
Woodlawn Ave Sch
Veterans Park
Pritchard Field
Elizabeth St Sch
Blair Sch
Water Tank
Park
Bell Gardens Sch
Bell Gardens Jr High Sch
Library
Live Oak Sch
South Gate High Sch
Civic Center
San Gabriel Ave Sch
South Gate Jr High Sch
Drive-in Theater
Vinvale
Gaging Station
Fire Station
Parking Area
South Gate Park
Tweedy Sch
Bryson Ave Sch
Trailer Park
Theodore Roosevelt Sch
Lugo Sch
Hospital
Well
Lynwood Academy
City Park
West Jr High Sch
Golf Course
Los Padrinos Juvenile Ha
PACIFIC (LUGO)
ATLANTIC
LOS ANGELES
LONG BEACH
FLORENCE
FIRESTONE
SOUTHERN
IMPERIAL
HIGHWAY
SANTA ANA
PENDLETON
ABBOTT
MISSOURI
MICHIGAN
WOOD
SHULL
CLARA
QUINN
JABONERIA
LIVE OAK
CORPORATE
BOUNDARY
N
Site Location Map
M. Stephens Manufacturing
8420 Atlantic Ave.
Cudahy, California
WESTON SOLUTIONS
0
Scale in Miles
0.5
Figure
1

Parcel Layout Map
M. Stephens Manufacturing
8420 Atlantic Avenue
Cudahy, CA

Figure
2

Site Layout Map
M. Stephens Manufacturing
8420 Atlantic Avenue
Cudahy, CA

Figure
3



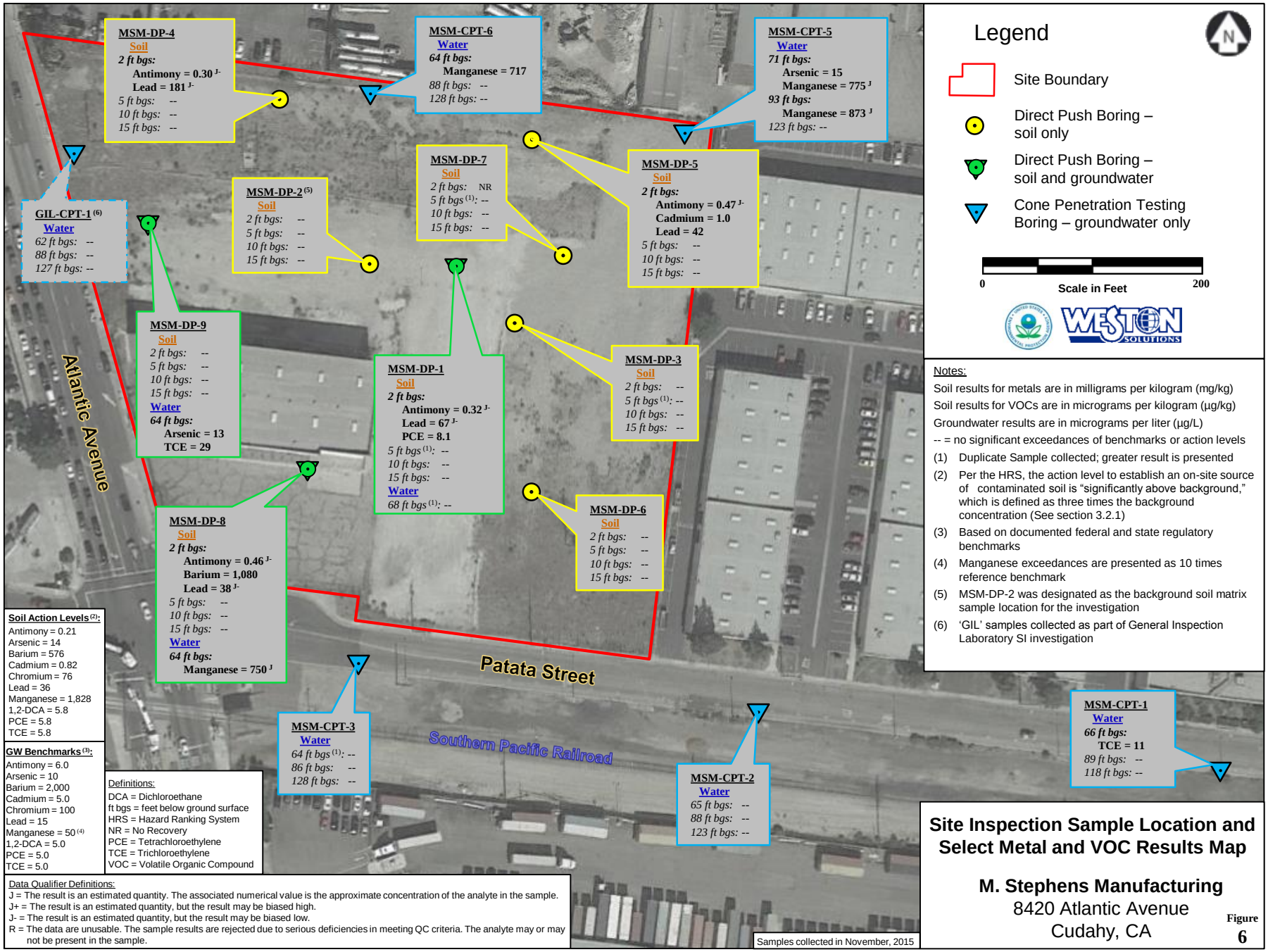
Historical Site Layout Map
M. Stephens Manufacturing
8420 Atlantic Avenue
Cudahy, CA

Figure
4

Site Inspection Sample Location Map

M. Stephens Manufacturing
8420 Atlantic Avenue
Cudahy, CA

Figure 5



Soil Action Levels (2):
Antimony = 0.21
Arsenic = 14
Barium = 576
Cadmium = 0.82
Chromium = 76
Lead = 36
Manganese = 1,828
1,2-DCA = 5.8
PCE = 5.8
TCE = 5.8

GW Benchmarks (3):
Antimony = 6.0
Arsenic = 10
Barium = 2,000
Cadmium = 5.0
Chromium = 100
Lead = 15
Manganese = 50 (4)
1,2-DCA = 5.0
PCE = 5.0
TCE = 5.0

Definitions:
DCA = Dichloroethane
ft bgs = feet below ground surface
HRS = Hazard Ranking System
NR = No Recovery
PCE = Tetrachloroethylene
TCE = Trichloroethylene
VOC = Volatile Organic Compound

Data Qualifier Definitions:
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+ = The result is an estimated quantity, but the result may be biased high.
J- = The result is an estimated quantity, but the result may be biased low.
R = The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

Notes:
Soil results for metals are in milligrams per kilogram (mg/kg)
Soil results for VOCs are in micrograms per kilogram (µg/kg)
Groundwater results are in micrograms per liter (µg/L)
-- = no significant exceedances of benchmarks or action levels
(1) Duplicate Sample collected; greater result is presented
(2) Per the HRS, the action level to establish an on-site source of contaminated soil is "significantly above background," which is defined as three times the background concentration (See section 3.2.1)
(3) Based on documented federal and state regulatory benchmarks
(4) Manganese exceedances are presented as 10 times reference benchmark
(5) MSM-DP-2 was designated as the background soil matrix sample location for the investigation
(6) 'GIL' samples collected as part of General Inspection Laboratory SI investigation

Samples collected in November, 2015

Site Inspection Sample Location and Select Metal and VOC Results Map

M. Stephens Manufacturing
8420 Atlantic Avenue
Cudahy, CA

Figure 6

Appendices
(attached under separate cover)